

A new species of *Bulbine* (Asphodelaceae) from Wilsons Promontory and islands of eastern Bass Strait

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Abstract

Bulbine crassa D.I.Morris & Duretto (Asphodelaceae), a stout perennial species ranging from Wilsons Promontory (Victoria) to near Cape Barren Island (Tasmania), is newly described. A key to the Tasmanian and Victorian species of *Bulbine* is provided.

Introduction

In 1958 Dr Mary Gillham (CSIRO) collected a specimen of a *Bulbine* from Anderson Island in the Furneaux Group (Tasmania). The specimen was at that time determined as *B. semibarbata* (R.Br.) Haw. as the filaments of the stamens opposite the outer perianth segments were either bare or bore only a few hairs. It was noted that the specimen was of an 'Extra large form' easily distinguished from the normal *B. semibarbata* with which it was growing. Subsequently, more specimens of the same type were collected from several islands of eastern Bass Strait and Wilsons Promontory in Victoria. Watson (1987) noted in the *Flora of Australia* that *B. semibarbata* was variable in habit and the size and shape of the leaves. She also noted that some plants from Tasmania and southern coastal areas of the mainland appear to be facultative perennials. *Bulbine semibarbata* usually behaves as an annual. In the *Flora of Victoria*, Conran and Walsh (1994) noted, in describing *B. semibarbata*, that 'A remarkable robust, fleshy and apparently perennial form occurs on rocky coastal sites on Wilsons Promontory and surrounding islands and at Cape Conran in the east'. They also note that a form of *B. glauca* (Raf.) E.M.Watson, similar to the above, is largely coextensive on and near Wilsons Promontory.

These large succulent perennials have usually been assigned to *B. semibarbata* in the past on the basis of the stamens opposite the outer perianth segments being glabrous (or nearly so) even though *B. semibarbata* normally behaves as an annual. The overall appearance of these large, perennial plants more closely resembles *B. glauca*.

Bulbine semibarbata is a variable species as noted by Watson (1986, 1987). Another one of the forms noted by Watson (1986, 1987) from the Pilbara Region of Western Australia has been formally described as *B. pendula* Keighery (Keighery 2004).

Taxonomy

Bulbine crassa D.I.Morris & Duretto, *sp. nov.*

Species haec a B. glauca (Raf.) E.M.Watson differt foliis carnosioribus, scapo crassiore basi 7–10 mm diametro et filamentis staminum exteriorum nudis vel pilis paucis.

Type: TASMANIA: FURNEAUX: Neds Reef, about 1 km off Neds Point on the north coast of Cape Barren Island, 40°20'S 148°04'E, 1 Dec. 1986, S. Harris (holotype: HO 312703)

Bulbine sp. nov. fide S. Harris, A. Buchanan and A. Connolly, *One Hundred Islands: The Flora of the Outer Furneaux* 122 (2001).

Illustrations: S. Harris, A. Buchanan and A. Connolly, *One Hundred Islands: The Flora of the Outer Furneaux* 122 [photograph] & 123 (2001), as *Bulbine* sp. nov.

Tufted herb perennating by offsets around the flowering shoot, glabrous apart from the stamens. *Roots* fleshy. *Leaves* erect, fleshy, the pith a delicate membranous honeycomb filled with a clear mucous sap, up to 50 cm long, to 2.5 cm wide at the base, plano-convex or shallowly channelled, bright green, slightly glaucous, senescent leaves red-orange, shortly persistent. *Scapes* solitary except where two or more offsets flower together, up to 60 cm tall, usually taller than the leaves, 7–10 mm diameter at the base, dried scapes from the previous year often persisting. *Inflorescence* up to 30 cm long; *bracts* lanceolate-acute, c. 7 mm long; *pedicels* c. 10 mm long, *Perianth* segments 12–13 mm long, yellow, nerve green, more prominent abaxially. *Stamens* 6; the 3 opposite the outer perianth segments c. 7 mm long, the filaments naked or with a few to many short simple hairs below the anther; the 3 opposite the inner perianth segments c. 9 mm long, the filaments with a dense beard of clavate hairs 1–1.5 mm below the anther; *anthers* 1–1.8 mm long, versatile, greenish. *Ovary* globose, c. 2 mm in diameter; *style* 2–2.8 mm long, slightly curved upwards; *stigma* shortly 3-lobed. Mature *capsule* 5–6.5 mm in diameter. *Seeds* 2–3 per locule, 3–3.5 mm long, black, narrowly winged, wrinkled.

Additional specimens examined: VICTORIA: WILSONS PROMONTORY: Wilsons Promontory National Park, 11 Nov. 1983, A.C. Beaglehole ACB75403 (MEL, photograph HO); Wilsons Promontory, 39°00'S 146°25'E, 21 Nov. 1989, E.A. Chesterfield s.n. (MEL 2012402, photograph HO); Notch Island, 38°56'S 146°40'E, 21 Dec. 1978, M. Harris & D. Deerson (MEL 593493); Rag Island, 38°57'S 146°40'E, 21 Dec. 1978, M. Harris & D. Deerson (MEL 593494); Rabbit Island, 38°31'S 146°55'E, 10 Dec. 1979, I.F. Norman (MEL 576432); Wattle Island, 39°08'S 146°21'E, 12 Dec. 1979, I.F. Norman (MEL 576433); Citadel Island, 39°07'S 146°14'E, F.I. Norman & R. Brown (MEL 593495); Dannervig Island, Glennie Group, 39°06'S 146°14'E, 17 Jan. 1980, I.F. Norman (MEL 576430); TASMANIA: FURNEAUX: Rodondo Island, 39°14'S 146°23'E, 13 Nov. 1984, N.P. Brothers 64 (HO); Cone Islet, 39°30'S 146°40'E, 12 Nov. 1984, N.P. Brothers 3 (HO); South West Island, 39°31'S 147°07'E, 11 Nov. 1984, N.P. Brothers 306 (HO); Craggy Island, 6 Sept. 1972, J.S. Whinray 188 (MEL); *ibid.*, 39°41'S 147°41'E, 17 Dec. 1986, S. Harris (HO 104072); *ibid.*, 30 Mar. 1972, J.S. Whinray 300a (HO); Oyster Rocks (southern island), Anderson Group, 40°17'S 148°04'E, 2 Dec. 1986, S. Harris (HO 105318); Little Woody [Anderson Island] and Mid Woody Island, Franklin Sound, 40°17'S 148°06'E, 16 Dec. 1958, M. Gilham (HO 114257); Mid Woody Island, Anderson Island group, Franklin Sound, 40°18'S 148°07'E, 2 Dec. 1986, S. Harris (HO 103167); Little Woody Island, 2 Nov. 2002, S. Harris (CANB, HO 530711, MEL); Little Anderson Island, 40°17'S 148°06'E, 3 Jun. 2000, A.M. Buchanan 15735 (HO); *ibid.*, 40°18'S 148°07'E, 2 Dec. 1986, S. Harris (HO 103627); Anderson Island, Franklin Sound, 40°19'S 148°06'E, 2 Dec. 1986, S. Harris (HO 107085); Doughboy Island, 40°21'S 148°03'E, 1 Dec. 1986, S. Harris (HO 107778).

Etymology: The specific epithet is the Latin *crassa*, thick, solid, referring to the fleshy leaves and the stout scape.

Notes: *Bulbine crassa* is variable in the indumentum of the outer stamens unlike other species of *Bulbine* found in Tasmania and Victoria. While in many plants the outer staminal filaments are glabrous (like *B. semibarbata*) some specimens have outer staminal filaments that have a few hairs or are quite hairy. With so few collections available and most populations known from single collections it would be premature to do more than note this variation.

Distribution: In Tasmania, *B. crassa* is found on smaller, low-lying islands of the eastern side of Bass Strait from Doughboy Island (Furneaux Group) to Rodondo Island (Anser Group); collections have been seen from the Furneaux, Kent, Curtis and Anser Groups. In addition to the localities cited above the species has been seen on Hogan Island (Hogan Group; Mark Holdsworth and Stephen Harris, pers. com.) and Erith Island (Kent Group; Beth Gott, pers. comm.). In Victoria, *B. crassa* is found on Wilsons Promontory and on nearby offshore islands including Rabbit Island, and some members of the Glennie Group, Anser Group and the Seal Islands.

Conran and Walsh (1984) indicated that the robust form of *B. semibarbata* was found at Cape Conran. There are no specimens of *B. crassa* from Cape Conran lodged at either the National Herbarium of Victoria (Neville Walsh, pers. comm.) or at the Tasmanian Herbarium.

Habitat: The species is found in areas subject to salt-laden westerly winds on loams or skeletal sandy soils overlying granite. Primarily it is found in *Poa poiformis* (Labill.) Druee tussock grassland or occasionally in coastal shrubland or mats of salt-tolerant natives (eg. with *Disphyma crassifolium* (L.) L.Bolus). Where the island has been subjected to grazing by livestock then *Lycium ferocissimum* Miers may also be present (eg. on Nedds Reef and Little Anderson Island). Flowering material has been collected from September to February; fruiting material has been collected from November to February with old scapes often persisting until the next flowering season.

Conservation status: *Bulbine crassa* is found in a number of reserves. In Victoria, all known populations are in either Wilsons Promontory National Park or the Seal Island Wildlife Reserve. In Tasmania, populations are found on remote islands, some of which are reserved: the Kent Group (South West and Erith Islands) is a proclaimed national park; Doughboy (Furneaux Group), Curtis (Curtis Group) and Rodondo (Anser Group) Islands are nature reserves; and Oyster Rocks are part of a conservation area. Little information on population sizes is given with collections though on Hogan Island (Hogan Group) it was estimated that 1000's of plants were present (Mark Holdsworth and Stephen Harris, pers. com.). Some of the islands on which the species is found, e.g. South West, Curtis, Cone, Craggy and Rodondo, could be considered to be pristine (Stephen Harris, pers. comm.). Others are affected by grazing, fire and weed incursion.

Given that many of the known populations of *B. crassa* are on remote islands that are relatively pristine and/or are adequately reserved, *B. crassa* could be considered to be secure though rare. Field research is required to ascertain population sizes, identify threats and accurately determine the conservation status of *B. crassa*.

Key to the species of *Bulbine* found in Tasmania and Victoria

To include *B. crassa* in the key to the species of *Bulbine* found in Australia (Watson 1987, p. 237) insert couplet 2 (below) onwards for couplet 5.

1. Perianth segments less than 7 mm long; stamens opposite outer perianth whorl glabrous; plants annual **B. semibarbata**
1. Perianth segments more than 7 mm long; stamens opposite outer perianth whorl usually bearded, sometimes sparsely so or glabrous; plants perennial 2
 2. Mature leaves flaccid, not succulent; tubers present; anthers more or less basifixed, partly obscured by hairs **B. bulbosa**
 2. Mature leaves succulent; tubers absent; anthers versatile, not obscured by hairs 3
 3. Scapes 2–5.5 mm across at base; all stamens with a dense tuft of hairs **B. glauca**
 3. Scapes 7–10 mm across at base; stamens opposite inner perianth whorl with a dense tuft of hairs, stamens opposite outer perianth whorl glabrous or with few to many hairs **B. crassa**

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